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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/057,399	01/25/2002	Mario Merlin	2-2817	1606

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EXAMINER
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MITCHELL, JAMES M

ART UNIT	PAPER NUMBER
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2827

DATE MAILED: 02/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	Application No. 10/057,399	Applicant(s) MERLIN ET AL.	
	Examiner James M. Mitchell	Art Unit 2827	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 October 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,5-7,10 and 12-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,5-7,10 and 12-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 13-21 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. There is no support in the specification for "discrete" circular connector. Admittedly (App. Spec. P 5) applicant indicated that the ring is welded to the flange and rib; therefore, the ring is integrated not discrete.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 2, 13-14 and 16-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Koichi (JP 55-050659).

10. Koichi (Fig 3a-c) discloses a compression assembled thyristor semiconductor package comprising a semiconductor die inherent in a wafer (1) having a first major surface (top) and a second major surface (bottom), with a control electrode (4) disposed on a first major surface of said die, and a first (3) and second electrode (2) disposed on a first and second major surface, a molded plastic insulation ring (9) annularly disposed around said die, an annular flange (10a) connected to said insulation ring at an end thereof, a first pole (7) being surface to surface electrical contact with said first electrode with said first pole includes an annular rib (portion of 10b closest to pole) extending from a surface, said first pole unitarily including an annular rib and said annular flanges, thereby connecting said first pole to said flange, and a second pole being in surface to surface electrical contact with said second electrode and supported by an insulation ring, whereby the semiconductor is held between the first and second pole and a circular connector (integrated middle portion of 10b & thus discrete as defined by applicant) connecting said annular rib and said annular flange, whereby an inherent circular connector (middle portion of 10) connecting said annular rib and said annular flange (via single layer).

***Claim Rejections - 35 USC § 103***

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

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not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 2, 13-17 and 19-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wislocky et al. (US 3,831,067).

Wislocky (Fig 1, 3) discloses a compression assembled semiconductor package comprising a semiconductor die inherent in a wafer (36) having a first major surface (top) and a second major surface (bottom), with a control electrode (metal on the top and bottom surface; not labeled) disposed on a first major surface (Column 3, Line 41) of said die, and a first and second electrode disposed on a first and second major surface (via metal formed on top and bottom surface; Column 1, Lines 66-68), a molded plastic insulation ring (33; Column 2, Lines 48-49) annularly disposed around said die, a control signal carrier (37 and 38; via terminal connected to the control lead) extending through said insulation ring from the exterior thereof and electrically connected to said control electrode (Column 5, Lines 7-9), a first pole (11) being surface to surface electrical contact with said first electrode (Column 4, Lines 3-7) with said first pole includes an annular rib (portion of 29 closest to pole) and an annular flange (portion of 29 farthest from pole ) which is at least partially embedded in said ring thereby anchoring said pole to said insulation ring (via adhesive; not labeled); and a circular connector (middle portion of 29 ), said second pole includes an annular rib (portion of 29 closest to pole, 31) and an annular flange (portion of 29 farthest form pole; partially in item 33) which is at least partially embedded in said ring and a circular connector

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(integrated middle portion of 29 ), wherein the first pole includes a groove (13; via pedestal) to allow said control carrier to reach said control electrode, a connection tab (39) extending radially from the pole through the ring and forming an external terminal ("Gate" Column 3, Lines 50-54), the control carrier further comprises an L- shaped slender rod that is a small insert (Column 3, Line 48) with said terminal tube (37; inherently a carrier), as such the rod is a bond wire (via a wire that is bonded) and a tab, wherein a portion of the tab is a control lead (37) that extends through the molded plastic insulation ring, said tab having a head (portion in contact with electrode) in electrical contact with said control electrode; with the connector inherently connecting said annular rib and said annular flange (via a singular piece).

Wislocky does not appear to explicitly disclose that the connector is discrete.

In any event, it would have been obvious to one of ordinary skill in the art to form a discrete connector, since it has been held that constructing a formerly integral structure into various elements involves only routine skill in the art. Nerwin v. Erlichman, 168 USPQ 177, 179 (BdPatApp&Int 1969).

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wislocky et al. (US 3, 831, 067) as applied to claim 13 in further combination with Kouchi (JP55-050659).

Wislocky does not explicitly disclose a thyristor or a pin in electrical contact one end of thereof with said control electrode and electrically connected by a conductive strip to a lead that extends through the body of said ring.

However, Koichi utilizes a thyristor held in place by a first (7) and second pole (8) surrounded by a ring (9) with a pin (15, "screw") attached to an electrode (4) and electrically connected by a conductive strip (14) to a lead (12) that extends through the body of the ring (9).

It would have been obvious to one of ordinary skill in the art to form the semiconductor of Wislocky as a thyristor in order to provide for an alternate device for which the housing could be used for as taught by Wislocky (Column 1, Lines 5-11).

Further, it would have been obvious to one of ordinary skill in the art to incorporate a pin that is electrically connected by a strip to a lead to be attached to the electrode, in order to avoid variations of gate signal in the thyristor as taught by Koichi.

#### ***Allowable Subject Matter***

Claims 1, 5, 6, 7, 10 and 12 are allowable. The following is an examiner's statement of reasons for allowance: the prior art does not disclose or make obvious a compression assembled semiconductor package comprising a pole with a unitary body with a rim being ultrasonically bonded directly to an end of a molded plastic insulation ring including all the limitations set forth in the independent claims.

#### ***Response to Arguments***

Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

#### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

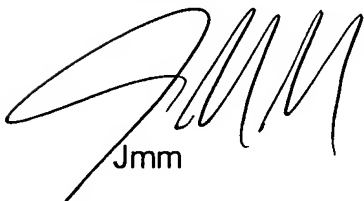
§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James M. Mitchell whose telephone number is (571) 272-1931. The examiner can normally be reached on M-F 6:30-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamand Cuneo can be reached on (571) 272-1957. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



Jmm



**DAVID E. GRAYBILL**  
**PRIMARY EXAMINER**